# EVERGREEN INVESTMENTS 114 CC MEFT PORTAL SUBMISSION

Environmental Management Plan



If you can't measure it You can't control it



CK 96/44367/23 (SA) CC/2005/3576 (NAM)

APP: 001264

## **EVERGREEN INVESTMENTS 114 CC EMP Report** for

SMALL SCALE MINING

at Farm Rooiberg 83, Hardap Region

PROJECT NO: 2023/044/C

## **Building towards better** safety

Health **Environment** Quality

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#### STATEMENT PAGE

National Environmental Health Consultants CC (NEHC CC) is an Approved Inspection Authority in terms of the Occupational Health and Safety Act (85 of 1993). (Certificate No.: CI 057 0H) SA and A.I.A 23/09 Namibia, Labour Act, 1992 (Act 6 of 1992) as amended under the Labour Act 2007, (Act 11 of 2007). And registered at the Allied Health professions Council of Namibia (HPCNA) as an Environmental Health Practitioner Reg. No.: EPH00901 under the Allied Health Professions Act, 2004 (Act. 7 of 2004).

J. Cornelissen conducted this EIA on behalf of **National Environmental Health Consultants CC** and hereby declares that the results/findings given in the report are a true reflection of conditions encountered during the survey/observations on site.

Where relevant published and validated methods exist, they are always used in preference to novel methods. If a novel method is applied, a summary of validation and reference to the internal Standard Operating Procedure(s) is provided.

Whilst recommendations offered in this report are made in good faith and every effort made to ensure the professional integrity thereof, the final responsibility lies with the client to ensure the correctness and suitability of these recommendations prior to implementation. **National Environmental Health Consultants CC** or its officers shall in no way be liable for any losses suffered by the client as a result of the implementation of such recommendations.

**NEHC CC** and its personnel shall not be involved in activities in relation with projects or items surveyed which may adversely influence our independence of judgment and integrity. The company (NEHC CC) is appointment as an Independent Occupational Hygienist or Environmental Practitioner Consultant in terms of an agreement for rendering its expertise services. NEHC CC declare that they will not form lucrative connections with the designated parties, by the forging of relationships with key decision-makers particular, with those in the industry to which the company offers its services.

Possible scenarios shall be reported in time to be prevented and if these may arise through the course of projects, they shall also be reported.

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Date: 4<sup>th</sup> of July 2023

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Ministry of Labour, Industrial Relations and Employment Creation NAMIBIA

#### NATIONAL ENVIRONMENTAL HEALTH CONSULTANTS

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#### 1. ENVIRONMENTAL MANAGEMENT PROGRAMME

#### 1.1 Aims

The aim of the Environmental Management Plan (EMP) is to detail the actions required to effectively implement the mitigation and management measures. These actions are required to minimize or avoid any negative impacts associated with the proposed exploration, prospecting, and mining activities and operations of **EVERGREEN INVESTMENTS 114 CC.** 

#### 1.2 Management and Mitigation Measures to Achieve Objectives

The management and mitigation measures to achieve the objectives relating to the various environmental issues are listed in tabular format, in **Section 2**. The proponent of the exploration, prospecting, and mining activities and operations is ultimately responsible for the implementation of the EMP. However, all members of the management and operational team are expected to understand the EMP requirements and to implement them.

#### 1.3 Introduction

Please refer to the EIA for more detailed information.

#### 1.3.1 Locality



#### 1.3.2 Background

National Environmental Health Consultants CC (NEHC CC) has been appointed by EVERGREEN INVESTMENTS 114 CC to conduct the Environmental Impact Assessment (EIA) and Environmental Management Process (EMP) in terms of the:

- Environmental Impact Assessments are regulated by the Ministry of Environment, Forestry, and Tourism (MEFT), in terms of the Environmental Management Act, 7 of 2007, which was promulgated and published in the Government Gazette No. 3966, on 27 December 2007, and
- The List of Activities that may not be undertaken without an Environmental Clearance Certificate and the Environmental Impact Assessment Regulations in terms of the Environmental Management Act, 7 of 2007, which were

promulgated and published in Government Gazette No. 4878, on 6 February 2012.

**EVERGREEN INVESTMENTS 114 CC** has acquired and registered four (4) NEPL Claims (Non-Exclusive Prospecting Licenses) for small scale mining. These four (4) NEPL Claims are as follows:

- NEPL Claim 1 which was applied for on 7 September 2022, and registered under NEPL Number: 73701. NEPL Claim 1 pertains to dimension stone and semi-precious stones, and the claim area measures an extent of 17.868 hectares.
- NEPL Claim 2 which was applied for on 29 September 2022, and registered under NEPL Number: 73766. NEPL Claim 2 pertains to dimension stone and semi-precious stones, and the claim area measures an extent of 15.6717 hectares.
- NEPL Claim 3 which was applied for on 29 September 2022, and registered under NEPL Number: 73767. NEPL Claim 3 pertains to dimension stone and semi-precious stones, and the claim area measures an extent of 17.1356 hectares.
- NEPL Claim 4 which was applied for on 7 November 2022, and registered under NEPL Number: 73931. NEPL Claim 4 pertains to both base and rare metals, dimension stone, industrial minerals, precious metals, and semi-precious stones, and the claim area measures an extent of 16.7488 hectares.

It is the intention of **EVERGREEN INVESTMENTS 114 CC** to perform, and conduct exploration, prospecting, and mining activities on the four (4) NEPL Claim areas listed hereinabove. All four (4) of the NEPL Claim areas falls exclusively within the boundaries of the Farm Rooiberg 83.

The Farm Rooiberg 83 is privately owned, and is used for residential, agricultural, and farming purposes, and is situated approximately 67 km (sixty-seven kilometers from the town Matlahöhe, in a Southwestern direction, when driving on the C14 gravel road. The four (4) NEPL Claims have a combined extent measuring roughly 67.4241 hectares.

Although the four (4) NEPL Claims have been approved, and granted by the Ministry of Mines and Energy, no exploration, prospecting, or mining activities may be undertaken, prior to the issuance and obtainment of an Environmental Clearance Certificate, as issued by the Ministry of Environment, Forestry, and Tourism. In order to obtain an Environmental Clearance Certificate, **EVERGREEN INVESTMENTS 114 CC** must first undertake, and complete the Environmental Impact Assessment Process, as the exploration, prospecting, and mining activities which they intend to undertake, is a listed activity in terms of the Environmental Impact Assessment Regulations of 2012. The following listed activities will be undertaken by **EVERGREEN INVESTMENTS 114 CC**:

- Activity 3.1: The construction of facilities for any process or activities which requires a license, right, or other form of authorization, and the renewal of a license, right, or other form of authorization, in terms of the Minerals (Prospecting and Mining Act), 1992.
- **Activity 3.2:** Other forms of mining or extraction of any natural resources, whether regulated by law, or not.
- Activity 3.3: Resource extraction, manipulation, conservation, and related activities.

**EVERGREEN INVESTMENTS 114 CC** is a wholly owned Namibian Company. In terms of both Namibia's Vision 2030, as well as the National Development Plan 4 and Harambee Prosperity Plan, the need for economic growth and employment creation is recognized, and significant value is placed thereon. It should be borne in mind that mining is one of the main contributing sectors to Namibia's Gross Domestic Product. Mining operations at its core has the potential to create substantial employment opportunities not only in the mining industry, but in the supply and service industry as well.

The proposed exploration, prospecting, and mining activities which **EVERGREEN INVESTMENTS 114 CC** intends to conduct, and perform under this proposed project, will contribute to both economic growth as well as the creation of employment opportunities, in line with the Namibia's Vision 2030, the National Development Plan 4, and the Harambee Prosperity Plan. However, the economic growth and the creation of employment opportunities, this proposed project can bring about, is not limited to the mining industry alone, but also extends to the service and supply industry.

As previously stated, this proposed project will be entirely undertaken on the Farm Rooiberg 83, which is situated approximately 67 km (sixty-seven kilometers) from the town of Maltahöhe in a Southwestern direction, whilst traveling on the C14 gravel road, in the Hardap Region. It should be noted that the community in and around Maltahöhe have been plagued by high unemployment rates in recent years. Through this proposed project the community in and around Maltahöhe may experience some upliftment from their current circumstances and be granted a much-needed reprieve from the high unemployment rates.

An Environmental Scoping (EIA) and EMP report on the proposed activity, which is the subject of this report, was carried out to ensure that it will comply to and with the relevant requirements for approval by the Ministry of Environment, Forestry and Tourism.

The Environmental Scoping and EMP report were done quantitatively, consisting of descriptions of the installations, the operation, and processes. This was followed by identification of the material hazards, reviewing incident experience, and noting tests done. Hazardous events were also analyzed, their consequence severity and likelihood quantified. A combination of severity and likelihood allowed estimation of the risks, which were then compared with acceptability targets, from which the need for further risk treatment must be focused on.

#### 1.4 Phases of the Project

The aim of this EMP is to derive mitigation and management measures that should be made binding on both the management as well as all of the employees of **EVERGREEN INVESTMENTS 114 CC** and these mitigation and management measures should be implemented and maintained throughout all of the phases of the proposed project.

The purpose of the EMP is to provide solutions to problems before they may occur. If adhered to, this EMP should limit corrective measures required during the lifetime of the project.

Further mitigation and management measures will be implemented throughout the different phases of the project, if and when necessary.

The EMP deals with the following phases as detailed below:

#### 1.4.1 The Planning Phase

The EMP renders a fair opportunity to incorporate pro-active environmental management measures in order to achieve sustainable development. A proactive environmental measure reduces the risk of impacts occurring throughout the phases of the proposed project. However, a chance of accidental impacts taking place still does exist; and this can be counter-acted through the incorporation of contingency plans (e.g., this EMP), during the planning phase. Necessary corrective action can be taken to further limit potential impacts that may occur during the phases of this project.

#### 1.4.2 Pre-Operational Phase

Pro-active planning prior to the commencement of the exploration, prospecting, and mining activities and operations, minimizes the chances of impacts occurring during the prospecting, drilling, and pitting, trenching, and trial mining phases.

Actions relating to the pre-operational phase include:

- The Appointment of an Environmental Control Officer (ECO) and Environmental Liaison Officer (ELO),
- Planning and on-site briefing sessions between the Developer, Local and Regional Authorities, Employees, ECO, and ELO, and
- The active demarcation of areas to be avoided and/or protected during the exploration, prospecting and mining activities and operations, which includes:
  - The active identification of areas which should be cleared, and
  - The marking of features outside of the demarcated areas that must be retained.

#### 1.4.3 The Prospecting Phase

Please note that although some impacts are expected to occur during the prospecting phase of the proposed project, however, the majority of the potential impacts which may occur, are anticipated or are likely to occur during both the drilling phase, as well as the pitting, trenching, and trial mining phase. Kindly be advised that both the drilling phase, as well as the pitting, trenching, and trial mining phase will hereinafter collectively be referred to as the Operational Phase.

Majority of the impacts during this phase will have a direct and immediate effect (e.g. pollution, noise and dust). Continual monitoring of the site during the construction phase will assist in identifying impacts as and when they occur. These impacts can then be mitigated through the contingency plans identified in the planning phase.

#### 1.4.4 The Operational Phase

As mentioned hereinabove, both the drilling phase, as well as the pitting, trenching, and trial mining phase are collectively referred to as the Operational Phase of this proposed project.

It is anticipated that the majority of the impacts which had been identified during the EIA Scoping and Screening Process, may, or are likely to occur during the operational phase of this proposed project. The aforesaid impacts are likely to have a direct and immediate effect, such as pollution, noise generation, and dust creation. Therefore, continual monitoring of the project site will be necessary in order to identify impacts, as and when they occur, where-after these impacts can then be mitigated and managed through the contingency plans identified during the planning phase.

Potential environmental impacts arising during the operational phase can be minimized, by taking proactive measures during the planning phase, and by so, the risk of incidents occurring, can be minimized and monitoring may be reduced, but not eliminated.

#### 1.5 Anticipated Environmental Impacts

It should be noted that the anticipated adverse impacts, which will require mitigation relating to both the biophysical, as well as the socio-economic environment, has a probability of occurring throughout all of the phases of the proposed project. These possible adverse impacts are:

- The pollution and contamination of surface water and groundwater resources,
- The destruction of fauna and flora.
- The degradation of land,
- The destruction of rangeland and grazing areas,
- Visual intrusion and light pollution,
- Safety and security,
- Atmospheric pollution and odours,
- The contamination and pollution of the soil,
- Soil Erosion,
- Noise pollution and vibration,
- Waste management,
- Occupational Health and Safety,
- Increased road use and increased traffic, and
- The disturbance of archaeological and heritage sites.

#### 1.6 Responsible Parties

There are several role players who will be participating in the environmental management of the proposed site, namely:

#### 1.6.1 Project Manager

- The Project Manager will be responsible for overseeing the project from the initiation to the completion thereof.
- The Project Manager will appoint employees who will be responsible for the conduction and performance of the exploration, prospecting, and mining activities and operations on the project site.
- The Project Manager will be responsible for ensuring that the proposed project is implemented according to the requirements, as set out in the EMP.
- The Project Manager should ensure that sufficient resources are available to the other role players to efficiently perform their tasks in terms of the EMP.
- The Project Manager must appoint an independent Environmental Control Officer (ECO) to ensure strict adherence to the EMP.

#### 1.6.2 Production Manager

The production manager appointed by the Project Manager will be allowed to work on the project and will oversee the individual contracts between the owners of the entire site or portions thereof, and the contractors.

#### 1.6.3 Environmental Control Officer

The Environmental Control Officer will be appointed at the start of the project and will be mandated to do the following:

To ensure that all employees are fully aware of their respective environmental responsibilities. This will take the form of an initial environmental awareness-training program, in which the requirements of this document, will be explained.

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- Any damage to the environment must be repaired as soon as possible after consultation between the Environmental Control Officer and the Project Manager.
- The Environmental Control Officer shall monitor the actions, activities, and operations at, and on the project site, to ensure that the Project Manager adheres to, and complies with, all of the stipulations, as contained in the EMP.
- The Environmental Control Officer shall be responsible for the monitoring of the activities and operations at, and on the project site throughout the lifetime of the project, by means of site visits and meetings. This should be documented as part of the site meeting minutes.
- The Environmental Control Officer must sign off, and the Project Manager must certify that all clean-up and rehabilitation, or any remedial action required, are completed.
- Periodic environmental audits must be conducted and performed to establish and ensure that all the conditions of the EMP are implemented and adhered to.

#### 1.6.4 Auditing / Inspections

- The project site must be subjected to inspections as and when necessary, by the appointed Environmental Control Officer, however, these inspections must be undertaken at periodic and regular intervals.
- The Project Manager must accompany the Environmental Control Officer on and to on-site inspections.
- In order to measure and determine compliance with this EMP, the formats as presented in this EMP should be used when reporting to the Project Manager in respect of the implementation of, and adherence to the EMP.
- When, in the opinion of the Environmental Control Officer, an activity will result in environmental damage, the Environmental Control Officer will issue instructions to the Project Manager, who will in turn order the employees to halt the activity. Spot fines or penalties may be levied for non-compliance therewith.

#### 1.6.5 Method Statements

- Method statements will be required for specific activities in sensitive environments on request of the Authorities or the Environmental Control Officer.
- All method statements will form part of the EMP documentation and are subject to all the terms and conditions contained within the EMP document.
- For each and every instance, wherein it is requested that, the employees submit a method statement to the satisfaction of the Environmental Control Officer, the format should clearly indicate the following:
  - What a brief description of the work to be undertaken,
  - How a detailed description of the process of work, methods, and materials.
  - Where a description / sketch-map of the locality of work, and
  - When the sequencing or phases of actions, with an estimation of commencement and completion dates.
- The employees must submit the method statement before any particular activity is due to start. Work may not commence until the method statement has been approved by the Environmental Control Officer.

#### 1.6.6 Record Keeping

All records and documents related to the implementation of the EMP must be kept and retained together, in an office where it is safe.

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All records and documentation must be kept, retained, and stored for a minimum of two (2) years, and must be available for scrutiny by the relevant authorities at any time.

#### 1.6.7 Maintenance Manager

- A Maintenance Manager acts as a direct, on-site resource for all technical aspects related to the development. The Maintenance Manager is available on the construction site at all times, overseeing all phases of the construction activities.
- The Maintenance Manager will also liaise with the Environmental Control Officer where required to ensure the satisfactory implementation of the EMP.

This EMP must be attached as an Appendix to service provider tender documents and referred to in the tender documents as special conditions of the tender.

**EVERGREEN INVESTMENTS 114 CC** as the Proponent of this proposed project, ultimately remains responsible for ensuring that the exploration, prospecting, and mining activities and operations are performed and conducted according to the requirements, as established in the EMP throughout all of the phases of the proposed project and will retain legal accountability.

**EVERGREEN INVESTMENTS 114 CC** should thus, appoint suitably qualified personnel, to whom such responsibility could be delegated to, to ensure that the EMP is correctly and adequately implemented, and who will:

- Know the contents and implications of the EIA and monitor the implementations of the EMP findings, whilst using the EMP report,
- Guide, advise, and consult the employees on environmental issues during the decommissioning and rehabilitation of the project site,
- Revise the EMP as required and inform the relevant parties of the changes, and
- Protect the environment.

It is the responsibility of the Service Providers and Contractors during the decommissioning and rehabilitation of the project site to:

- Ensure that all the requirements of the EMP are communicated to, understood and followed by all persons working on the project, who may have an impact on the environment.
- Ensure that a procedure exists for reporting incidents and resolving any problems rapidly, and
- Keep good records relating to the compliance/non-compliance with the conditions of the authorization. These records must be made available to the relevant authority within seven (7) days, upon receipt of a written request.
- The Environmental Control Officer: The Environmental Control Officer is appointed by the Project Manager as an independent monitor of the implementation of the EMP. The Environmental Control Officer is responsible for providing feedback on any potential environmental problems associated with the proposed project. The Environmental Control Officer has the right to enter the site and to perform and conduct monitoring and auditing at any time, subject to compliance with health and safety requirements applicable to the site. The Environmental Control Officer will be responsible for a minimum of monthly site audits, followed by an environmental control report, that will detail the status of the environmental compliance, and highlight mitigation. The Environmental Control Officer will be responsible for liaising with authorities, the Ministry of Environment, Forestry, and Tourism (MEFT) and local authorities. The Environmental Control Officer must submit monthly environmental audit reports to the authorities. The Environmental Control Officer must indicate the necessary corrective action measures to eliminate the cause of the non-conformances. The Environmental Control Officer is also responsible for liaising with employees and staff,

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informing them of any decisions that are taken concerning the environmental management throughout the lifetime of the proposed project.

- **Site Agent:** The Site Agent is usually a project supervisor who is the Project Manager's most senior representative on site and coordinates the activities on the project site. The Site Agent must follow the advice of the Environmental Control Officer with regards to environmental management and ensure that the employees abide by all the requirements stipulated and set out by the Environmental Control Officer.
- **Contractor:** All Contractors on site, is bound by the Environmental Clearance Certificate and EMP conditions throughout the contract with the developer, and is responsible for ensuring that all the conditions of the EMP are strictly adhered to at all times. All Contractor must comply with all orders (whether verbal or written) given by the Environmental Control Officer, Project Manager or Site Agent in terms of the EMP.
- The Environmental Liaison Officer: The Site Agent shall appoint one of the employees or staff members on the project site, as an Environmental Liaison Officer to assist with day-to-day monitoring of the project activities and operations for the duration of the proposed project. Issues raised by the Environmental Control Officer will be routed to the Environmental Liaison Officer for the Site Agent's attention. The Environmental Liaison Officer shall be permanently on site during all the phases of the proposed project, to ensure daily environmental compliance with the EMP.
- The Environmental Liaison Officer should preferably be a senior and respected member of the staff compliment; as previous experience revealed that Environmental Liaison Officers who better relate to the workforce are most effective for information transfer, and ensuring compliance with the EMP. The Environmental Liaison Officer will report directly to the Environmental Control Officer regarding environmental compliance. The site audits undertaken by the Environmental Control Officer will be undertaken alongside the Environmental Liaison Officer. The Environmental Control Officer will point out areas of concern; the Environmental Liaison Officer will be responsible for ensuring day-to-day compliance with the EMP. Should any emergencies arise the Environmental Liaison Officer will alert the Environmental Control Officer, who will then act accordingly. There shall be an approved Environmental Liaison Officer on site at all times. Prior to the commencement of any activity on the project site, a written statement setting out the following will be prepared, and provided to the Site Agent:
  - The type of activity,
  - The locality where the activity will take place,
  - The identification of impacts that might result from the activity,
  - The identification of activities or aspects that may cause an impact,
  - The methodology for impact prevention for each activity or aspect,
  - Emergency/disaster incident and reaction procedures has to be demonstrated, and
  - The treatment and continued maintenance of the impacted environment.
- Community Liaison Officer: The Site Agent must also appoint a Community Liaison Officer
  to act as a point of contact between the workforce and the community, affected by the project
  activities. Complaints from the community regarding project activities should be directed to
  the Community Liaison Officer. It is the responsibility of the Community Liaison Officer to liaise
  with the Interested and Affected Parties.

#### 1.7 ENVIRONMENTAL MANAGEMENT PROGRAMME

The following tables form the core of this EMP for all of the phases of this proposed project. This table should be used as a checklist on site. Compliance with this EMP must be audited monthly.

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#### 2. IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

There is a probability that the exploration, prospecting, and mining activities and operations, which **EVERGREEN INVESTMENTS 114 CC** intends to undertake, might impact the biophysical and socio-economic environment. Environmental aspects and potential impacts were identified during the screening and scoping phases, in consultation with authorities, Interested and Affected Parties and the environmental specialists.

The relevance of the potential impacts ("screening") is also presented in **Table 1 and 2** below to determine if certain aspects need to be assessed in further detail. The potential impacts can also be assessed as part of this process.

**Table 1 and 2** below provides a summary of the environmental aspects and impacts associated with the intended exploration, prospecting, and mining activities and operations to be conducted by **EVERGREEN INVESTMENTS 114 CC.** 

Table 1: Pre-Operational Phase.

Table 1		PRE-OPERATIONAL PHASE:			
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THEREON	RESPONSIBILITY	TIME FRAME
Review and approval of EMP	To ensure sound Environmental Management on site.	<ul> <li>The EMP must be reviewed and approved by th deciding authority and any considerations deeme necessary by the said authority must be included.</li> </ul>	d	Ministry of Environment, Forestry, and Tourism (MEFT)	Pre-operational phase
2. Duties of the Project Manager	The Project Manager remains ultimately responsible for ensuring that the proposed project proceeds according to the requirements of the EMP	<ul> <li>Include the EMP in the tender documentation so that the appointed contractor is bound to the conditions of the EMP.</li> <li>Take responsibility and the necessary actions required for restoring the environment in the event of negligence, leading to the damage of the environment.</li> <li>Appoint an independent Environmental Control Officer during the pre-operational phase to oversee all the environmental aspects relating to the proposed project from its inception to its completion.</li> <li>Provide the Environmental Control Officer with all reasonable assistance to facilitate effective monitoring.</li> </ul>	the tender documentation.  Proof that financial means for restoration and rehabilitation are available should it be necessary.  Appointment letter.  Proof that all reasonable requests made by the Environmental Control Officer have been facilitated as far as possible.	Project Manager and/ or Company	All project phases.
3. Appointment and duties of Environmental Control Officer	To ensure monitoring and implementation of the EMP, by an independent third party.  To report on the Project Manager's compliance with the EMP.	<ul> <li>The Project Manager must appoint an independer Environmental Control Officer who must monitor compliance with the EMP, on a continuous basis.</li> <li>The Environmental Control Officer shall report on the findings of the monitoring throughout all the phase of the proposed project to MEFT on a quarter basis.</li> </ul>	Proof that quarterly reports are submitted to the MEFT. Proof that EMP is provided to all the relevant role players.  y Minutes of site meetings to be included in EIA compliance.	Project Manager and Environmental Control Officer	All project phases.
4. Appointment and duties of the Environmental Liaison Officer	To attend to the day- to-day monitoring of activities on the site, compliance, and cooperation of all personnel.	<ul> <li>The Site Agent must appoint an Environmental Liaison Officer.</li> <li>The Environmental Liaison Officer must preferable be fluent in the languages of the work crew.</li> </ul>		Site Agent	Pre-operational phases

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Table 1		PRE-OPERATIONAL PHASE:			
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THEREON	RESPONSIBILITY	TIME FRAME
6. The EMP	To ensure effective environmental management on site during the lifetime of the proposed project.	<ul> <li>This EMP must be made binding on all employees and staff and must be included in tender documentation.</li> </ul>	Proof that EMP is included in the tender documentation.	Project Manager	All project phases.
<ol> <li>Awareness of he workforce</li> </ol>	To ensure effective environmental management on site during the lifetime of the proposed project.	<ul> <li>It is the Project Manager's responsibility, as employer to ensure that the workforce is aware of, and conforms to the environmental guidelines that are applicable in the EMP.</li> </ul>		Project Manager	Continuous throughout all of the project phases.
B. Record of environmental ncidents	To ensure that incidents are recorded, and that remedial action is taken, that would restore the environment to acceptable conditions.  To ensure quick and appropriate responses to environmental incidents.  To ensure adequate recordings of environmental incidents.  To prevent the recurrence of similar incidents.	<ul> <li>The Project Manager shall take corrective action to mitigate an incident appropriate to the nature and scale of the incident, immediately after the occurrence of the incident.</li> <li>Residual environmental damage that remains after having taken corrective action shall be rehabilitated.</li> <li>Change operating procedures where necessary to prevent recurrence of similar incidents.</li> <li>Record all incidents on an Environmental Incident Register.</li> <li>Report the incident within a 24-hour period after the occurrence thereof.</li> <li>Additional documents, including photos shall be appended to the incident report to provide a comprehensive record of the incident and the corrective and preventative action that was taken. Failure to do so shall result in a penalty.</li> <li>All incidents will be investigated in collaboration with the Environmental Control Officer. The focus of these investigations shall not be to apportion blame to specific employees, but to ascertain the root cause of the incident and to prevent a recurrence of similar incidents.</li> </ul>	Incidents Report	Project Manager, Site Agent, and Environmental Control Officer	All project phases.

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SMALL SCALE MINING – EMP – FARM ROOIBERG 83,

HARDAP REGION

Occupational Hygienist Johan Cornelissen

Project No: 2023/044/C

Table 1		PRE-OPERATIONAL PHASE:			
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THEREON	RESPONSIBILITY	TIME FRAME
9. Rehabilitation planning	To limit disturbed areas to the minimum.	<ul> <li>The Project Manager and Site Agent shall liaise with the Environmental Control Officer during the preoperational phase to agree on acceptable limits of disturbance.</li> <li>A Landscape Master Plan is to indicate areas where rehabilitation is required as well as the specifications of the rehabilitation.</li> </ul>	rehabilitation areas.	Project Manager, Site Agent, and Environmental Control Officer	All project phases.
10. Implementation of Sustainable Design Principles	To ensure the development is undertaken in a harmonious manner with regards to the environment.	<ul> <li>Avoid the use of energy intensive, environmentally damaging, waste producing, and/or hazardous materials.</li> <li>Climate:         <ul> <li>Apply natural conditioning techniques to effect appropriate comfort levels for human activities.</li> <li>Avoid overdependence on mechanical systems to alter the climate (such dependency signifies inappropriate design, disassociation from the environment, and no sustainable use of resources).</li> </ul> </li> <li>Temperature (When climate is predominantly too hot for comfort):         <ul> <li>Minimize solid enclosure and thermal mass.</li> <li>Maximize roof ventilation.</li> <li>Use elongated or fractured floor plans to minimize internal heat gain and maximize exposure for ventilation.</li> <li>Separate rooms and functions with covered breezeways to maximize wall shading and induce ventilation.</li> </ul> </li> <li>Sun:         <ul> <li>The sun can be an asset in cool and cold climates to provide passive heating.</li> <li>The design must reflect seasonal variations in solar intensity.</li> <li>When solar gain causes conditions too hot for comfort, use overhangs to shade walls and</li> </ul> </li> </ul>	Plans	Developer, Architect, Maintenance Manager	Pre- Construction design and planning phases

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		openings.  • Use shading devices such as louvers, covered porches, and trellises with natural vines to block sun without blocking out breezes and natural light use lighter-colored wall and roofing material to reflect solar radiation (be sensitive to resulting glare and impact on natural/cultural setting.)			
		<ul> <li>Wind: (wind can be an asset in hot, humid climates to provide natural ventilation):</li> <li>Use natural ventilation wherever feasible; limit airconditioning to areas requiring special humidity or temperature control.</li> </ul>			
		Lighting: Natural lighting should be used wherever possible. Lighting design should be based on standards of reduced general lighting with task lighting and highlighting for specific functional considerations.			
		<ul> <li>Waste prevention:</li> <li>Use products that minimize waste and that are nontoxic.</li> <li>Promote recycling and re-use.</li> </ul>			
		<ul> <li>Site design considerations:</li> <li>Plan landscape development according to the surrounding context rather than by overlaying familiar patterns and solutions.</li> <li>Locate structures to take maximum advantage of passive energy technologies to provide for human</li> </ul>			
		<ul> <li>comfort.</li> <li>Provide space for processing all wastes created onsite, so that no hazardous or destructive wastes will be released into the environment.</li> <li>Develop facilities to integrate selected maintenance functions such as energy conservation, waste</li> </ul>			

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BENEFICIAL IMPACT Socio-economic		reduction, recycling, and resource conservation into structures, native plants into landscaping, and local customs into programs and operations.  Visual Character:  Natural vistas should be used in design whenever possible.  Creating onsite visual intrusions should be avoided, and views of offsite intrusions should be carefully controlled.  A natural look can be maintained by using native building material, and working with the topography.  Incorporate indigenous materials and crafts.			
Skills     Development and job opportunities	Increased economic opportunities for local communities.	<ul> <li>As far as reasonably possible people from surrounding communities must be employed.</li> </ul>	Inclusion in the Contract.	Project Manager	Pre-operational phase.
2. Removal of exotic plant species and establishment of indigenous vegetation.	To encourage the implementation of indigenous vegetation and to increase biodiversity	<ul> <li>All classified Invader Species are to be identified, controlled or eradicated.</li> <li>Eradication of exotic invader plant species by means of an appropriate method, as specified by the Environmental Control Officer.</li> <li>Dead weeds/exotic invader species must be discarded and disposed of at a landfill site.</li> </ul>		Contractors, Environmental Consultant and Environmental Control Officer	Design, planning, and construction phases
ADVERSE IMPACTS Socio-economic					
Visual Intrusion and Light Pollution	Minimize visual intrusion and light pollution.	<ul> <li>The site must be managed appropriately, and all rubbish and waste are to be removed to a recognized waste facility.</li> <li>Excess soil, bedrock, and mineral waste should be disposed of at an appropriate facility.</li> <li>A certificate of disposal must be obtained for any waste that is disposed of.</li> <li>Waste must not remain on site for more than 2</li> </ul>		Project Manager, Site Agent, Environmental Control Officer, and Environmental Liaison Officer	All project phases.

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2. Noise Pollution and Vibration	Minimize noise pollution and vibration levels.	<ul> <li>weeks.</li> <li>Categorized refuse bins must be provided, whereby employees can dispose of the different categories of waste in their designated waste refuse bins.</li> <li>No waste or refuse may be disposed of, buried, burned, or stored at the project site.</li> <li>A proper and adequate waste management plan must be developed and enacted.</li> <li>Employees must be properly trained in respect of waste management.</li> <li>Hazardous waste must be disposed of by a registered hazardous waste disposal contractor at a registered hazardous waste disposal facility.</li> <li>No waste may be placed in any excavations on site.</li> <li>The removal of vegetation and site clearing must be limited so as not to cause too much of a visual intrusion.</li> <li>Activities and operations must be limited to daytime hours between 08:00 AM and 17:00 PM on weekdays.</li> <li>Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring occupants, community, disturb wildlife, or interfere with road traffic.</li> <li>Noise levels shall be kept within acceptable limits, and employees must abide by National Noise Laws and local by-laws regarding noise.</li> <li>If work is to be undertaken outside of normal work hours permission must be obtained. Prior to commencing any such activity, the Project Manager or Site Agent is also to advise the potentially affected neighbouring occupants and community. Notification could include letter-drops.</li> <li>No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site, except in emergencies and no amplified music is permitted on site.</li> <li>Activities and operations, involving the use of the</li> </ul>	Incident reports indicating complaints from neighbouring properties.  Maintenance schedule to ensure that equipment and machinery with noise reduction facilities are in a good and working condition.	Project Manager, and Site Agent	All project phases.

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	Minimize atmosphere pollution and odors.	service vehicles, machinery, drilling etc., must be limited to daytime hours between 08:00 AM and 17:00 PM on weekdays.  Activities that may disrupt neighbors must be preceded by notice being given to the affected neighbors at least 24 hours in advance.  Equipment that is fitted with noise reduction facilities must be used as per the operating instructions and maintained properly during site operations.  All reasonable and practical measures must be taken to reduce the generation and transmission of vibration caused by machinery and equipment.  Noise levels should comply with SANS Code of Practice 100103 – 0994 (recommended noise levels).  The movement of vehicles and trucks, which generate noise, will be restricted to daytime hours, between 08:00 AM and 17:00 PM on weekdays.  Dust generation should be kept to a minimum.  Dust must be suppressed on access roads during dry periods by the regular application of water or a biodegradable soil stabilization agent.  Speed limits must be implemented in all areas to limit the levels of dust pollution.  It is recommended that the clearing of vegetation from the site should be selective, and that the site clearing immediately precedes any exploration, drilling, pitting, trenching, or trial mining activities, so as to minimize erosion and dust.  Sand stockpiles are to be covered with Hessian, shade cloth or DPC plastic.  Where possible stockpiles are to be located in sheltered areas and the usable/cut face orientated away from the direction of the prevailing wind for that season.  Excavating, handling, or transporting erodible materials in high wind or when dust plumes are visible shall be avoided.	Incident reports Indicating complaints from neighboring Properties.  Maintenance schedule in respect of the machinery and equipment used on the project site.  Records of daily inspections conducted pertaining to machinery and equipment on site	Project Manager, Site Agent, Environmental Control Officer	All project phases.

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4. Safety and Security	Prevent loss of assets of surrounding landowners.  To ensure that potential liabilities and damage to life and the environment are avoided.	<ul> <li>All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials.</li> <li>No burning of refuse or vegetation is permitted.</li> <li>A maintenance plan must be established and implemented in respect of all earth moving equipment.</li> <li>Daily inspections are to be carried out with respect to equipment and machinery.</li> <li>Should weather conditions be of such a nature that the continuation of work may result in unacceptably high risks of significant release of airborne particulate matter, all work and operations must be ceased temporarily, until the weather conditions improve.</li> <li>Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime.</li> <li>The site and crew are to be managed in strict accordance with the Labour Act, 6 of 1992, as amended by the Labour Act, 11 of 2007.</li> <li>Potentially hazardous areas such as trenches, are to be cordoned off and clearly marked at all times.</li> <li>The Project Manager is to ensure traffic safety at all times and shall implement road safety precautions for this purpose.</li> <li>Necessary Personal Protective Equipment (PPE) and safety gear appropriate for the task being undertaken, is to be provided to all site personnel.</li> <li>All vehicles and equipment used on site must be operated by appropriately trained and/or licensed individuals in compliance with all safety measures as laid out in the Labour Act, 6 of 1992, as amended by</li> </ul>	Safety Plan  Incidents Report, including indication of remedial actions to ensure that future incidents do not occur.  Register in respect of the Personal Protective Equipment issued to employees.  Training records signifying that employees were provided with both health and safety	Project Manager, Site Agent, Environmental Control Officer.	All project phases.
		the Labour Act, 11 of 2007.  Ohnomber An environmental awareness training programme for all staff members shall be put in place by the Project Manager. Before commencing with any work, all staff	awareness training.		

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		members shall be appropriately briefed about the EMP and the relevant occupational health and safety issues.  All employees shall be issued with ID badges and clearly identifiable uniforms.  Access to equipment stores has to be strictly controlled.  No unauthorized firearms are permitted on site.  Emergency procedures must be in place and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and that the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life are avoided.  Adequate emergency facilities must be provided for the treatment of any emergency on the site.  The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle.  Emergency contact numbers are to be displayed conspicuously at prominent locations around the project site.  Basic Spill Control Kits and Drip Trays must be readily available at the project site, and employees must be trained in respect of the correct and appropriate utilization thereof.  It is recommended that the site-specific exploration areas be fenced off, for the duration of the project.  Access control to the project site must be implemented and no unauthorized personnel will be allowed at or on the project site.  All structures that are vulnerable to high winds must be secured, such as chemical toilets.  All holes, pits, and excavations must be covered and clearly marked with danger tape. In addition, thereto, signage must also be placed at such holes, pits, and excavations indicating the dangers.	Plan.		

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5. Possible damage/loss of subterranean artifacts	Prevent damage/ loss of subterranean artifacts.	<ul> <li>No employees will be allowed to leave the boundaries of the project site for any reason whatsoever.</li> <li>Staff should be adequately trained in respect of dealing with crime.</li> <li>Employees must be regularly updated regarding safety procedures on site.</li> <li>Ensure that after the completion of exploration, that holes, trenches, and drill cuttings are put back into their holes and that the holes are filled and levelled, whilst trenches are respectively to be backfilled.</li> <li>Should archaeological structures/ artifacts be discovered during the lifetime of the project, these may not be removed, destroyed or interfered with. The area should be cordoned off until it can be investigated by an archaeological specialist or SAHRA.</li> <li>All activities and operations shall be ceased immediately, and an archaeological specialist and SAHRA, within 24 hours, should they come across any archaeological artifacts/ sites.</li> <li>In terms of the National Heritage Act, graves older than 60 years (not in a municipal graveyard) are protected.</li> <li>The relevant heritage resources authority and the archaeologist must be informed as a matter of urgency, should any human remains be exposed on the terrain.</li> <li>Human remains younger than 60 years should only be handled by a registered undertaker, or an institution declared under the Human Tissues Act.</li> </ul>	No destruction of Archaeological finds/ removal of artifacts	Project Manager, Site Agent, Environmental Liaison Officer.	All project phases.
6. Increase traffic and road use on the C14 and D831 could	Minimize impact on traffic flow and visibility on the C14	<ul> <li>Existing roads must be utilized as far as possible.</li> <li>No unauthorized access is permitted.</li> <li>No new access roads or tracks will be created on the</li> </ul>	No evidence of Report of accidents	Project Manager, and Site Agent	All project phases.
prove to be a nuisance to commuters and	and D 831 The existing gravel	<ul><li>project site without the express written consent of the farm-owners.</li><li>Access roads for earthmoving equipment and</li></ul>			
local road users and		delivery of machinery, products, supplies, and	21		

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could also negatively impact the safety of the roads.	roads used to gain access to the project site, must be maintained.	materials must be clearly designated.  A road safety program will be implemented in order to inform all relevant parties of the possible risks of the project site, including red flags should be used to warn the public and truck and vehicle operators at least 100m before crossing points or access routes into the project area.  Develop an information campaign regarding the hazards associated with increased heavy vehicle traffic, and precautionary measures to be taken.  Ensure adequate and correct road signage in the affected area.  Activities and operations should be limited to daytime hours between 08:00 AM and 17:00 PM on weekdays.  Access routes to be limited.  Heavy truck loads must comply with the maximum speed limit for respective vehicles while transporting materials, machinery, and equipment, on both existing roads as well as access roads.  The unnecessary movement of vehicles to and from the project site must be minimized.  The drivers and operators of project vehicles and trucks must be in possession of valid driver's licenses and must adhere to road and traffic rules.  Access roads on the project site must be equipped with temporary road and traffic signs to cater for vehicles and trucks travelling to and from the project site.  No project vehicles or trucks may be parked outside of the project site.  The site access roads must be upgraded to an acceptable standard, so as to ensure that the access roads can not only accommodate project related vehicles, but the vehicles of the farm-owners as well.  The C14 gravel road leading from Maltahöhe to the project site, must be regularly maintained, to ensure that the road is in a good condition for local road.			

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		users.			
Bio-physical			<u> </u>		<u> </u>
1. Soil Erosion	Limit loss of soil.	<ul> <li>Slopes with a gradient exceeding 1:3 should be avoided.</li> <li>Appropriate erosion and storm water management structures must be installed around the project site.</li> <li>Storm water control measures on site could include:         <ul> <li>Berms;</li> <li>Energy Dissipating Structures; and</li> </ul> </li> <li>Regular inspections are to be conducted by the Environmental Control Officer to ensure compliance with these requirements.</li> <li>The exploration and prospecting schedule or program are to indicate when specific areas may be cleared.</li> </ul>	the Environmental Control Officer to ensure compliance.	Project Manager, Site Agent, Environmental Liaison Officer.	All project phases.
2. Soil and Groundwater Pollution	Prevent contamination of natural resources.	<ul> <li>Where rehabilitation of cleared areas is planned, topsoil should be preserved for this purpose.</li> <li>The top 20cm of soil must be stripped as fertile topsoil and stockpiled at a designated place to be used in the rehabilitation of the project site.</li> <li>All vehicles, trucks, machinery, and equipment must be properly maintained to prevent leakages.</li> <li>Vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site.</li> <li>Drip trays are to be utilized during daily greasing and refueling of machinery and to catch incidental spills and pollutants.</li> <li>Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow.</li> <li>All project vehicles and trucks are to be kept in a good working condition and should not be the source of excessive fumes.</li> <li>Fuel should be stored in a bunded area.</li> <li>The generators to be used to provide the project site with power or electricity should also be operated in</li> </ul>	water resources Maintenance schedule or maintenance plan in respect of machinery and equipment.  Records of training provided to employees.  Records of daily inspections carried out in respect of machinery and equipment on site.	Project Manager, Site Agent, Environmental Control Officer.	All project phases.

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3. Destruction of Fauna and Flora, as well as rangeland and grazing areas	Minimize impact on fauna and flora.  Prevention of associated soil loss which could result in dust generation and would impact negatively on the natural environment.  Prevention of the	<ul> <li>and on a bunded area.</li> <li>Surface drainage and spillages on hard surfaces should be channeled daily.</li> <li>All excavations must be inspected regularly.</li> <li>Once earthworks are complete, disturbed areas are to be stabilised with mulch, straw, or other approved methods.</li> <li>Additionally, quality testing (major ions and hydrocarbons) will be useful baseline data for future monitoring protocols.</li> <li>A maintenance plan should be adopted and developed for all vehicles, trucks, machinery, and equipment on the project site.</li> <li>Daily inspections should be carried out on machinery and equipment used on site.</li> <li>No equipment or machinery shall be serviced on site.</li> <li>Drip trays and spill kits must be readily available and easily accessible on the project site, and drip trays and spill kits should also be in vehicles and trucks.</li> <li>All employees must be provided with training in respect of the correct and appropriate use of both drip trays and spill kits.</li> <li>After the completion of exploration, trenches are to be backfilled, whilst holes, drill cuttings, and pits are to be filled and levelled.</li> <li>Site clearing and the removal of vegetation is to be limited to only the site-specific exploration areas.</li> <li>No littering by employees is permitted. Any litter will be collected and removed off-site to a registered waste site or landfill site, at least once every two (2) weeks.</li> <li>No burning of stockpiled vegetation is permitted.</li> <li>No alien plant species may be introduced to the site, and they must be controlled.</li> <li>The alien plants on site will be removed.</li> <li>Alien vegetation re-growth must be controlled throughout the entire site.</li> </ul>	Containment of project footprint.  Records of training provided to employees.  The operational	Project Manager, Site Agent, Environmental Control Officer	All project phases.

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	loss of rangeland and grazing areas.	<ul> <li>The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution.</li> <li>Upon completion of the project, the project site must be fully rehabilitated.</li> <li>Stockpiles of vegetation are only to be located in areas approved by the Environmental Control Officer, and such stockpiles shall not exceed 2 meters in height. The methods in which the vegetation is stockpiled must be considered, so as not to create a fire hazard.</li> <li>The disturbance of birds, animals, and reptiles as well as their habitats should be prevented at all times.</li> <li>The movements of trucks, vehicles, machinery, and equipment must be restricted to existing access roads and tracks, to avoid inflicting further damage and destruction to vegetation and grazing areas.</li> <li>No on-site vegetation may be cut or used for firewood.</li> <li>Suitable and appropriate operational management guidelines must be formulated and implemented in respect of cleared areas and these operational management guidelines must be incorporated into progressive rehabilitation measures.</li> <li>Employees must refrain from disturbing, killing, or stealing livestock, as well as soil and rock outcrop species found on the project site.</li> <li>The importance of the preservation of biodiversity must be included in the environmental awareness training provided to employees.</li> <li>The unnecessary removal or destruction of grazing areas or grazing land as a result of the project activities must be avoided at all costs.</li> <li>The vegetation found on the project site, which does not fall within the site-specific exploration areas must not be disturbed and must remain intact, so as to preserve biodiversity and grazing land.</li> </ul>			

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TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THEREON	RESPONSIBILITY	TIME FRAME
4. Unsupervised and misuse of fire on site	To reduce the risk of a fire on site.  To reduce the risk of widespread veldfires.	<ul> <li>No smoking is allowed on the project site.</li> <li>Fire extinguishers must be readily available and easily accessible at the project site.</li> <li>Fire extinguishers must be serviced, full and in good working order.</li> <li>Employees must be provided with basic firefighting training.</li> <li>The Health and Safety Plan must include particulars in respect of firefighting and training.</li> <li>Staff must be trained adequately so as to identify and minimize the impacts of leaks and to deal with fires.</li> <li>Firefighting facilities must conform to the oil industry standard and must be inspected regularly.</li> </ul>	management practices.  Records of the servicing of fire extinguishers must be retained.  The Health and Safety Plan must address firefighting and training.	Project Manager, Site Agent, and Environmental Control Officer.	All project phases.
5. Waste management	To minimize/prevent the impact of waste on soil and water bodies.  To ensure the responsible disposal of waste generated on the project site and to prevent the accumulation of litter and waste on site and in the surrounding area.	<ul> <li>Waste skips are to be fitted with lids to prevent littering.</li> <li>Containers shall be emptied at least once every two (2) weeks by a licensed waste contractor and disposed of at a municipal waste site or a registered landfill site. No solid waste or any materials used may be disposed of on the project site.</li> <li>No waste material may be buried or burned on site.</li> <li>Liquid waste is to be stored in a bunded area. The bunded area is to have a complete seal and a volume equal to 110% of the total volume of liquid stored in the area.</li> <li>Liquid waste is to be disposed of at a class HH site only.</li> <li>Chemical containers and packaging brought onto the site must be removed for disposal at a suitable site.</li> <li>No material may be dumped in the surrounding region. Written proof of disposal at a registered waste disposal site must be given to the Environmental Control Officer in respect of every load disposed of.</li> <li>Bins shall be clearly marked and categorized to ease the management of waste and recycling.</li> </ul>	Proof of correct waste disposal at registered waste disposal sites and regular inspections by the Environmental Control Officer.	Project Manager, Site Agent, and Environmental Control Officer.	All project phases.

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-	SMALL SCALE MINING – EMP – FARM ROOIBERG 83,		
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Table 1		PRE-OPERATIONAL PHASE:				
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	OBJECTIVE ACTION REQUIRED		RESPONSIBILITY	TIME FRAME	
		<ul> <li>Hazardous waste may only be disposed of by a registered hazardous waste removal contractor and may only be disposed of at a registered hazardous waste disposal site.</li> </ul>				
6. Increase in storm water run-off	Minimize storm water run-off and prevent pollution of surface and groundwater.	<ul> <li>It is important to minimize concentration of storm water run-off and ponding of water to ensure successful storm water design.</li> <li>It is imperative that adequate surface and subsurface drainage conditions be provided prior and during the project activities.</li> <li>General surface water must be prevented from ponding.</li> <li>Limit hard services and make use of materials that are pervious or absorbent.</li> </ul>	per the Storm water Management Plan	Project Manager, Site Agent, Environmental Control Officer.	All project phases.	
7. Geotechnical Recommendations	Minimize risks related to soil instability on site.	<ul> <li>Good site drainage will be necessary to prevent water infiltration that may cause seasonal perched water tables or wet soil profile conditions.</li> <li>The saturation of the soil profile will also need special site drainage precautions as this may lead to additional collapse settlements under load.</li> <li>Due to the pollution potential from surface spills the surface drainage and prevention of perching will need special attention. Special measures will be needed, to prevent any spillage, if such an event occurs.</li> <li>The soil is expected to be highly corrosive, therefore special care during exploration drilling – hydraulic oils and fluids may result in soil and water contaminant</li> </ul>	per Storm water Management Plan	Project Manager, Site Agent, Management, Environmental Control Officer.	All project phases.	

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Table 2: Operational Phase (The operational phase consists of the prospecting, drilling, and pitting, trenching, and trial mining phase).

OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
BENEFICIAL IMPACTS					
Socio-economic				<u> </u>	
Job Opportunities and Economic Upliftment	Advantages for local previously disadvantaged communities in terms of employment, empowerment, and socio-economic upliftment.	<ul> <li>The proposed project will result in direct jobs being created. Indirectly, jobs are also created in the service and supply industries, that provide goods, materials, and services.</li> <li>The proposed project will increase skills development and also local employment in the area. Both short-term and long-term employment will be created in this case.</li> </ul>	Record of local workers employed.	Project Manager	All project phases.
Bio-physical				T -	
Removal of exotic plant species and the establishment of indigenous vegetation.	The removal of exotic plant species and the planting of indigenous vegetation within landscaped areas will increase biodiversity	<ul> <li>All classified Invader Species in terms of the said Act must be identified, eradicated and controlled.</li> <li>The Landscape Development Plan must as far as possibly make use of indigenous trees and plants.</li> <li>The use of exotic species must be limited.</li> </ul>	Landscape Development Plan	Contractors, and Environmental Consultant.	Design, planning, and construction phases
ADVERSE IMPACTS					
Socio-economic					
Visual Intrusion and Light Pollution	To mitigate the potential negative impact on "genius loci" and visual impact.	<ul> <li>on the site is not allowed.</li> <li>Refuse must be contained and disposed of at the municipal waste facility or at a registered landfill site.</li> <li>Refuse bins must be provided. These must be sufficient in number and must be easily accessible.</li> <li>The project site must be managed appropriately, and all rubbish, litter, refuse, and waste must be removed to a recognized waste facility.</li> </ul>	No complaints from surrounding property owners.  The enactment and implementation of an adequate waste management plan.  Records of training provided to employees.	Project Manager, and Site Agent.	All project phases.
	Date: 4 <sup>th</sup> of July 2023 SMAL	Company:  EVERGREEN INVESTMENTS 114 CC –  SCALE MINING – EMP – FARM ROOIBERG 83,  HARDAP REGION		oject No: 23/044/C	

TASK/ ENVIRONMENTAL IMPACT  OBJECTIVE ACTION REQUIRED  TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON  Excess soil, bedrock, and mineral waste should be disposed of at an appropriate facility.  TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON  RESPONSIBILITY TIME FRACE OF THE PROPERTY OF THE	OPERATIONAL PHASE	
waste should be disposed of at an disposals.		AL OBJECTIVE
A certificate of disposal must be obtained for any waste that is disposed of.  Waste may not remain on site for more than two (2) weeks.  Categorized refuse bins must be provided, whereby employees can dispose of the different categories of waste, such as domestic waste, recyclable waste etc., in their designated waste refuse bins.  No waste or refuse may be disposed of, buried, burned, or stored at the project site.  A proper and adequate waste management plan must be developed and enacted.  Employees must be trained in respect of waste management.  Hazardous waste may only be disposed of of waste management.  Hazardous waste may only be disposed of the second by a registered hazardous waste contractor at a registered hazardous waste contractor at a registered hazardous waste may be placed in any excavation on site.  The removal of vegetation and site clearing must be limited so as not to cause too much of a visual intrusion.  Lighting on site is to be sufficient for safety and security purposes but shall not be intrusive to the farm-owners or neighboring occupants, communities, disturb wildlife, or interfere with road traffic.		

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Johan Cornelissen 2023/044/C

OPERATIONAL PHASE							
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE		ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME	
		•	Activities and operations must be limited to daytime hours between 08:00 AM and 17:00 PM on weekdays.				
2. Increase in traffic and road use	Possible increased pedestrian hazard and increased road damage.  Gravel roads used to gain access to the project site, must be maintained.		Road surfaces in the immediate vicinity of the site should be monitored. If the road is damaged the relevant authority must be notified.  Access to and from the site must not have a negative impact on the traffic on the C14.  Existing roads must be utilized as far as possible.  No unauthorized access to the project site will be permitted.  No new tracks or access roads will be created on the project site, without the express written consent of the farmowners.  The access roads to be utilized for earthmoving machinery and equipment, as well as for the delivery of machinery, products, supplies, and materials must be clearly designated.  A road safety program must be implemented in order to inform all the relevant parties of the possible risks of the project site. This will include the use of red flags to warn the public, as well as truck and vehicle operators at least 100m before crossing points or access routes into the project area.  An information campaign will be developed pertaining to the hazards associated with increased heavy vehicle traffic, and precautionary measures will be taken.  Adequate and correct road signage must be in place in the affected areas.	No evidence of reported accidents.  The implementation of the road safety program.	Project Manager and Site Agent.	All project phases.	
		1	made so in place in the allected areas.		l		

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OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		<ul> <li>Activities and operations should be limited to daytime hours between 08:00 AM and 17:00 PM on weekdays.</li> <li>Access routes will also be limited.</li> <li>Heavy truck loads must comply with the maximum speed limit for respective vehicles, while transporting materials, machinery, equipment, products, and supplies, on both existing roads, as well as access roads.</li> <li>The unnecessary movement of vehicles to and from the project site must be minimized.</li> <li>The drivers and operators of project trucks and vehicles must be in possession of valid driver's licenses and must adhere to road and traffic rules.</li> <li>Access roads on the project site must be equipped with temporary traffic signs to cater for vehicles and trucks travelling to and from the project site.</li> <li>No project vehicles or trucks may be parked outside of the project site.</li> <li>The site access roads must be upgraded to an acceptable standard, so as to ensure that the access roads can not only accommodate project-related vehicles, but the vehicles of the farm-owners as well.</li> <li>The C14 gravel road leading from Maltahöhe to the project site, must be regularly maintained, to ensure that the road is in a good condition for local road users.</li> </ul>			

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OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
3. Noise and Vibration	To minimize the impact	<ul> <li>Noise levels shall be kept within the</li> </ul>	No complaints from	Project Manager,	All project
Levels.	of noise and vibration	acceptable limits, and staff must abide	surrounding property	Site Agent, and	phases.
	on surrounding	by National Noise Laws and local by-	residents.	Management	
	properties and the	laws regarding noise.			
	environment.		Maintenance schedule to		
		equipment is used, noise reduction	ensure that equipment		
			and machinery with noise		
		operating instructions and maintained	reduction facilities are in a		
		properly.	good and working		
		<ul> <li>Noise levels should comply with the</li> </ul>	condition.		
		SANS Code of Practice 100103-0994	A delition of the discount		
			Additional monitoring may		
		<ul> <li>Activities and operations, involving the</li> </ul>	be required to ensure that		
		use of service vehicles, machinery,	noise levels are with		
		drilling etc., must be limited to daytime	acceptable limits.		
		hours between 08:00 AM and 17:00			
		PM on weekdays.			
		The movement of trucks and vehicles			
		which generate noise will be restricted			
		to daytime hours, between 08:00 AM			
		and 17:00 PM on weekdays.			
		<ul> <li>Should it be necessary that work be undertaken outside of normal work</li> </ul>			
		hours, permission must be obtained.  Prior to commencing with such activity,			
		the Project Manager, or Site Agent			
		must also advise the farm-owners, the			
		neighboring occupants, and the			
		community. Notification could include			
		letter drops.			
		<ul> <li>Activities which may disrupt the farm-</li> </ul>			
		owners or neighbors, must be			
		preceded by notice being given to the			
		possible affected farm-owners and			
		neighbors, at least 24 hours in			
		advance.			
		<ul> <li>No sound amplification equipment</li> </ul>			
		such as sirens, loud hailers, or hooters			

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OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		<ul> <li>Hessian, shade cloth or DPC plastic.</li> <li>Where possible stockpiles are to be located in sheltered areas and the usable/ cut face orientated away from the direction of the prevailing wind for that season.</li> <li>Excavating, handling, pr transporting erodible materials in high wind or when dust plumes are visible, shall be avoided.</li> <li>All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate the covering or wetting of friable materials.</li> <li>No burning of refuse or vegetation on the project site is allowed.</li> <li>A maintenance plan must be established and implemented in respect of all earthmoving machinery and equipment.</li> <li>Daily inspections are to be carried out with respect of the equipment and machinery used on the project site.</li> <li>Should weather conditions be of such a nature that the continuation of work, may result in unacceptably high risks of significant release of airborne particulate matter, all work and operations must be ceased temporarily, until the weather conditions improve.</li> </ul>			
5. Safety and Security	Ensure safety and security of staff.	<ul> <li>Appropriate measures and procedures should be in place for dealing with</li> </ul>	Record of regular training for staff.	Project Manager, Site Agent and Management.	All project phases.
	Prevent loss of assets of	<ul><li>dangerous situations.</li><li>Staff should be adequately trained with respect to dealing with crime.</li></ul>	Safety Plan.	ivianagement.	
	surrounding	Equipment and materials must be	Incidents Report,		

			<u> </u>
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OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		1992, as amended by the Labour Act, 11 of 2007.  An environmental awareness training program for all staff members shall be out in place by the Project Manager. Before commencing with any work, all staff members shall be appropriately briefed about the EMP and the relevant occupational health and safety issues.  All employees shall be issued with ID Badges and clearly identifiable uniforms.  Access to equipment stores must be strictly controlled.  No unauthorized firearms will be permitted on site.  Emergency procedures must be in place and communicated to all employees on site. This will ensure that accidents are responded to appropriately and that the impacts thereof are minimized. This will also ensure that potential liabilities and damage to life are avoided.  The nearest emergency service provider must be identified during all the phases of the proposed project as well as its capacity and the magnitude of accidents it will be able to handle.  Basic Spill Control Kits and Drip Trays must be readily available at the project site, and employees must be trained in the correct and appropriate utilization thereof.  It is recommended that the site-specific exploration areas be fenced	REPORTING THERE ON		
		off, for the duration of the project.			

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OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		<ul> <li>Access control to the project site must be implemented and no unauthorized personnel will be allowed at or on the project site.</li> <li>All structures that are vulnerable to high winds must be secured, such as chemical toilets.</li> <li>All holes, pits, and excavations must be covered and clearly marked with danger tape. In addition, thereto, signage must also be placed at such holes, pits, and excavations, indicating the dangers.</li> <li>No employees will be allowed to leave the boundaries of the project site for any reason whatsoever.</li> <li>After the completion of exploration, holes, trenches, and drill cuttings must be put back into their holes, and those holes must be filled and levelled. Trenches must also be backfilled.</li> </ul>			
Bio-physical  1. Soil and Groundwater	Prevent soil and	Strict procedures for the management	Approved Spill	Project Manager	All project
Contamination and Pollution.	groundwater contamination and pollution.	<ul> <li>Strict procedures for the management of the site must be developed and adhered to.</li> <li>Staff must be trained to prevent spillages during loading and offloading of the product.</li> <li>Where the rehabilitation of cleared areas is planned, topsoil should be preserved for this purpose.</li> <li>The top 20cm of soil must be stripped as fertile topsoil and stockpiled at a designated place to be used in the rehabilitation of the project site.</li> <li>All vehicles, trucks, machinery, and equipment must be properly maintained to prevent leakages.</li> </ul>	Contingency Plan.  Record of regular training of staff.  No evidence of soil contamination or contaminated water resources.  Maintenance schedule or maintenance plan in	Project Manager, Site Agent, Environmental Control Officer, and Management.	All project phases.

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OPERATIONAL PHASE					
TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		<ul> <li>Vehicles are to be repaired immediately upon developing leaks. Drip trays must be supplied for all repair work undertaken on machinery at the project site.</li> <li>Drip trays are to be utilized during daily greasing and refueling of machinery and to catch incidental spills and pollutants.</li> <li>Drip trays are to be inspected daily for leaks and effectiveness and shall be emptied when necessary. This is to be closely monitored during rain events to prevent the overflow thereof.</li> <li>All project vehicles and trucks are to be kept in good working condition and should not be the source of excessive fumes.</li> <li>Fuel should be stored in a bunded area.</li> <li>The generators to be used to provide the project site with power or electricity should also be operated in and on a bunded surface or area.</li> <li>Surface drainage and spillages on hard surfaces should be channeled daily.</li> <li>All excavations must be inspected regularly.</li> <li>Once earthworks are complete, the disturbed areas are to be stabilized with mulch, straw, or other approved methods.</li> <li>Additionally, quality testing (major ions and hydrocarbons) will be useful baseline data for future monitoring protocols.</li> </ul>	Records of daily inspections carried out in		
		<ul><li>A maintenance plan should be</li></ul>			

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<b>OPERATIONAL PHASE</b>					
TASK/ ENVIRONMENTAI IMPACT	OBJECTIVE	ACTION REQUIRED	TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		adopted and developed for all trucks vehicles, equipment, and machinery on the project site.  Daily inspections should be carried ou on machinery and equipment used or site.  No equipment or machinery shall be serviced on site.  Drip trays and spill kits must be readily available and easily accessible on the project site, and drip trays and spill kits should also be available inside project vehicles and trucks.  All employees must be provided with training in respect of the correct and appropriate use of both drip trays and spill kits.  After the completion of exploration trenches are to be backfilled, whils holes, pits, and drill cuttings are to be placed back inside, filled, and levelled.			
2. Subsurface leaks	Prevent soil and groundwater contamination.	<ul> <li>Staff must be trained adequately so as to identify and minimize the impacts of leaks.</li> <li>A proper management and monitoring program must be implemented to ensure that the groundwater resources are protected.</li> </ul>	f Contingency Plan.  Record of regular training of staff.	Project Manager, Site Agent, and Environmental Control Officer.	All project phases.
3. Risks of Fires and Explosions	Prevent emergency incidents and the risks of fires on site.  To reduce the risk of widespread veldfires.	<ul> <li>The following signs must be installed:         <ul> <li>"NO SMOKING"</li> <li>"NO NAKED FLAME"</li> <li>"NO CELLPHONES"</li> </ul> </li> <li>Staff must be trained adequately so as to identify and minimize the impacts o leaks and to deal with fires.</li> <li>Fire extinguishers must be readily available and easily accessible at the</li> </ul>	Approved Emergency Response Plan.  Record of regular training of staff.  Implementation of effective fire management practices.	Project Manager, Site Agent, Management, and Environmental Control Officer.	All project phases.
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OPERATIONAL PHASE TASK/ ENVIRONMENTAL IMPACT	OBJECTIVE	ACTION REQUIRED	TAROCTO TO MONITOR		
			TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON	RESPONSIBILITY	TIME FRAME
		<ul> <li>project site.</li> <li>Fire extinguishers must be serviced, full and in good working order.</li> <li>Employees must be provided with basic firefighting training.</li> <li>The Health and Safety Plan must include particulars in respect of firefighting and training.</li> <li>Firefighting facilities must conform to the oil industry standard and must be inspected regularly.</li> </ul>	Records of the servicing of fire extinguishers must be retained.  The Health and Safety Plan must address firefighting and training.		
4. Waste Generation and Disposal	ground and surface water and the environment as a whole.  To ensure the responsible disposal of waste generated on the project site and to prevent the	<ul> <li>Solid waste generated needs to be collected at a central point. This waste will be disposed of as normal domestic waste at the closest municipal waste disposal site, or registered landfill site.</li> <li>The Waste Management and Pollution Control Act covers all aspects relating to waste management and must be adhered to at all times. Any other relevant legislation must also be adhered to.</li> <li>Waste management at the proposed project site shall be strictly controlled and monitored. Only approved waste disposal methods shall be allowed.</li> <li>It is the responsibility of the management of the proposed project site to ensure that all personnel are instructed in the proper disposal of all waste.</li> <li>Staff training should be undertaken every six months to capacitate staff in terms of waste minimisation, waste disposal.</li> <li>No waste may be dumped, disposed of, stored, burned, or buried on the project site.</li> <li>All hazardous waste generated on the</li> </ul>	Removal of waste to certified landfill sites.  Proof of correct waste disposal at registered waste disposal sites and regular inspections by the Environmental Control Officer.  Approved Waste Management Plan.  Record of training provided to employees.	Project Manager, Site Agent, Management, and Environmental Control Officer.	All project phases.

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TASK/ENVIRONMENTAL MPACT    ACTION REQUIRED   COMPLIANCE AND RESPONSIBILITY   TIME FRAME	OPERATIONAL PHASE					
project site, must be stored in a bunded area and may only be disposed of by a registered hazardous waste disposal contractor at a registered hazardous waste disposal site.  • Waste skips and waste refuse bins must be categorized for the different categories of waste and must be fitted with secure lids to prevent littering.  • Waste containers shall be emptied at least once every two (2) wees by a licensed waste contractor and disposed of at a municipal waste site or a registered landfill site. No solid waste or an ymaterials used may be disposed of on the project site.  • Liquid waste is to be stored in a bunded area. The bunded area is to have a complete seal and a volume equal to 110% of the total volume of the liquid stored in the area.  • Liquid waste is to be disposed of at a class HH site only.  • Chemical containers and packaging brought onto the project site, must be removed for disposal at a registered waste disposal site.  • No material may be dumped in the surrouncing region Written proof of disposal at a registered waste disposal site must be given to the Environmental Control Officer in respect of every load disposed of the Environmental Control Officer in respect of every load disposed of waste.  • An approved waste management plan	TASK/ ENVIRONMENTAL	OBJECTIVE	ACTION REQUIRED	COMPLIANCE AND	RESPONSIBILITY	TIME FRAME
disposal at a registered waste disposal site must be given to the Environmental Control Officer in respect of every load disposed of.  Employees must be provided with training in respect of the correct and proper management and disposal of waste.  An approved waste management plan		OBJECTIVE	project site, must be stored in a bunded area and may only be disposed of by a registered hazardous waste disposal contractor at a registered hazardous waste disposal site.  Waste skips and waste refuse bins must be categorized for the different categories of waste and must be fitted with secure lids to prevent littering.  Waste containers shall be emptied at least once every two (2) wees by a licensed waste contractor and disposed of at a municipal waste site or a registered landfill site. No solid waste or any materials used may be disposed of on the project site.  Liquid waste is to be stored in a bunded area. The bunded area is to have a complete seal and a volume equal to 110% of the total volume of the liquid stored in the area.  Liquid waste is to be disposed of at a class HH site only.  Chemical containers and packaging brought onto the project site, must be removed for disposal at a suitable site.  No material may be dumped in the	COMPLIANCE AND	RESPONSIBILITY	TIME FRAME
			disposal at a registered waste disposal site must be given to the Environmental Control Officer in respect of every load disposed of.  Employees must be provided with training in respect of the correct and proper management and disposal of waste.			

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#### **ANNEXURE A: ENVIRONMENTAL INCIDENT LOG**

Date	Incident	Comments (Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)	Mitigation Measure (Give details and attach documentation as far as possible)	ECO Signature

			/
Date:	Company:	Occupational Hygienist	Project No:
4 <sup>th</sup> of July 2023	EVERGREEN INVESTMENTS 114 CC -	Johan Cornelissen	2023/044/C
	SMALL SCALE MINING – EMP – FARM ROOIBERG 83,		
	HARDAP REGION		

#### **ANNEXURE B: COMPLAINTS RECORD SHEET**

RECORD OF COMPLAINTS	PAGE	OF	<b>DATE:</b> / /		
Complainant: Capacity of complainant: Complaint recorded by: Complaint:					
Capacity of complainant:					
Complaint recorded by:					
Complaint:					
Corrective measure:					
ECO: Notes by ECO:	Date:				
Notes by ECO:					

Date: 4<sup>th</sup> of July 2023 Company: EVERGREEN INVESTMENTS 114 CC – SMALL SCALE MINING – EMP – FARM ROOIBERG 83, HARDAP REGION Occupational Hygienist Johan Cornelissen Project No: 2023/044/C